## REMARKS

The Office Action mailed May 12, 2005 and references cited therein have been reviewed. Applicants have amended claims 1, 20, 25 and 43 by this amendment. It is noted that three references were not considered by the Examiner. Applicants noted that these three references along with several other references were mistakenly cited in this application and have no relevance to the current invention. As such, Applicants have not resubmitted these three references. Applicants apologize for any confusion or inconvenience regarding this matter.

Claims 1-6, 11-19, 24-30, 35-42 and 47 were rejected under 35 U.S.C. §103(a) as being unpatentable over DE 19754857. Claims 21-23 and 44-66 were rejected under 35 U.S.C. §103(a) as being unpatentable over DE 19754857 in view of Marhofer '123. Claims 1-20, 24-43 and 47 rejected under 35 U.S.C. §103(a) as being unpatentable over Lanouette '048 in view of JP 7-198346. Claims 21-23 and 44-66 were rejected under 35 U.S.C. §103(a) as being unpatentable over DE 19754857 and further in view of Marhofer '123.

Independent claims 1 and 25 have been amended to clarify the scope of the claimed invention. The claimed invention is directed to the determination of one or more properties of a welding wire that is being fed out of the tip of a welding gun. One or more electromagnetic waves are used to obtain such properties. The claims have been amended to clarify that the electromagnetic wave is always or substantially always intersecting at least a portion of the moving welding wire. As such, the present invention is distinguished from a static determination of a property of the welding wire such as the width of the wire as disclosed in JP 07-198346.

JP 07-198346 discloses a measuring device to measure the width of a wire. During the width measurement, the wire is not moving. It is noted that JP 07-198346 only discloses the measuring of a wire, not a welding wire. Irrespective of this fact, the arrangement disclosed in JP 07-198346

is different for the arrangement defined in the claims of the present invention. As such, the claimed invention is not obvious in view of JP 07-198346 in combination with Lanoutte '048 and/or Marhofer '123.

Regarding DE 1975857, the German reference does not disclose the use of a laser to determine the properties of the welding wire. The German reference only discloses the use of a laser to locate the position of a welding wire. The two lasers are set to intersect at a single point. The welding wire is then moved until the welding wire intersects this intersection point. When the welding wire does not intersect this intersection point, no information is known about the welding wire other than the fact that the welding wire is not at the intersection point of the lasers. The claimed invention is different in that the electromagnetic wave covers a region that is larger than the diameter of the welding wire so that the welding wire during a welding procedure is always intersecting at least a portion of the electromagnetic wave. Only by this arrangement can the properties of the welding wire be obtained. As such, the claimed invention is not obvious in view of the German reference alone or in combination with Marhofer '123.

Lanouette '048 was cited as including a wire sensor. The Examiner acknowledges that the wire sensor is part of the wire feeder, thus is not used to measure one or more properties of the welding wire as the welding wire is fed out of a welding gun. In addition, the wire sensor is disclosed as sensing flux cored or solid wires, wire type or wire diameter. None of these properties are defined in claims 20 and 43. As such Lanouette '048 is directed to a different type of sensor arrangement for a different type of use. Therefore, the claimed invention is not obvious in view of Lanouette '048 in combination with JP 07-198346 and/or Marhofer '123.

Applicants submit that all the claims are condition for allowance.

Respectfully submitted,
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